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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/685,687

10/14/2003

Xianhai Chen

014116-81.00US

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10/16/2006

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EXAMINER

ROSSI, JESSICA

ART UNIT

PAPER NUMBER

1733

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/685,687

Applicant(s)

CHEN ET AL.

Examiner

Jessica L. Rossi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-8 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Holman et al. (US 6831769, of record) in view of Bryan (US 6151153, of record) and further in view of the collective teachings of Bryan, Zuchowski (US 6483643, of record) and Haas et al. (US 5153759, of record).

With respect to claim 1, Holman is directed to a method for making an electro-optical sensor by providing a transparent substrate 110 comprising an optically smooth top surface and bottom surface (column 12, lines 39-41 and 47-49), coating the top surface of the glass with a transparent electrode 120 (column 12, lines 41 and 55-59), applying a composition of electro-optic sensor material 130 as a layer over the electrode without using a transfer substrate (note Holman teachings coating the sensor material directly onto the electrode – column 12, lines 41-42 and 60-62; column 3, lines 6-36), applying a thin layer of adhesive 180 over the layer of electro-optic sensor material (note reference teachings coating the adhesive directly onto the sensor material – column 13, lines 9-20), and applying/laminating a film (not shown in Figures – Holman refers to this film as a ‘backplane’) to the adhesive layer such that the film is substantially optically smooth against the sensor material (column 13, lines 24-27; column 4, lines 3-31).

It is unclear as to whether the reference teaches the transparent substrate being glass and the film being a pellicle film bearing a dielectric mirror layer.

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It is known in the art to make an electro-optical sensor by applying/laminating a pellicle as a film 26/230 bearing a dielectric mirror layer 232 onto an electro-optic sensor material, which has already been applied over an electrode that was coated onto a glass substrate, via an adhesive layer that has already been applied over the sensor material located on the electrode, as taught by Bryan (Figures 1-2; column 3, line 54 – column 4, line 66; column 5, lines 13-25; column 7, lines 60-62; column 9, lines 17-30). Bryan teaches the pellicle serving as a protective layer for the electro-optic sensor material (column 4, lines 36-38).

Since Holman is not concerned with a particular film for the backplane, as long as it serves to protect the electro-optic sensor material (column 4, lines 8-13), and one reading the reference as a whole would have readily appreciated that Holman is not concerned with forming a particular electro-optical sensor, it would have been obvious to one of ordinary skill to use a pellicle as a film bearing a dielectric mirror layer for the protective film of Holman because such is known in the art, as taught by Bryan, where such a film satisfies Holman's concern with protecting the sensor material while also imparting certain desirable characteristics to the electro-optical sensor that allow for its use as a particular type of electro-optical sensor.

Furthermore, since Holman only states that transparent plastic is "typically" used for the transparent substrate and is therefore not concerned with a particular transparent substrate for the electro-optical sensor (column 12, lines 47-49), it would have been obvious to use glass as an alternative to plastic because such is known in the electro-optical device art, as taught by the collective teachings of Bryan (column 4, lines 57-62), Zuchowski (Figure 8; column 5, lines 59-60; column 6, lines 30-34; column 8, lines 29-34; column 12, lines 11-14) and Haas (Figure;

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column 4, line 62 – column 5, line 2; column 5, line 58 – column 6, line 15), where glass serves as a more durable support substrate.

Regarding claim 2, Holman teaches the sensor material being PDLC (column 3, lines 34-36).

Regarding claim 3, Holman teaches the applying/laminating step being performed by vacuum lamination (column 4, lines 24-31).

Regarding claims 4-5, selection of a particular vacuum magnitude would have been within purview of the skilled artisan.

3. Claim 2 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Holman, Bryan, and the collective teachings of Bryan, Zuchowski and Haas as applied to claim 2 above, and further in view of Sadovnik et al. (US 5764317, of record).

Regarding claim 2, if it is not taken that Holman teaches the PDLC sensor material being applied over the electrode by the same methods used to apply the other sensor materials disclosed in the reference (without using a transfer substrate, i.e. coating it directly onto the electrode – column 12, lines 41-42 and 60-62; column 3, lines 6-36), it would have been obvious to apply the PDLC of Holman in the same manner as the other sensor materials because it is known in the electro-optical device art to coat a PDLC sensor material directly onto an electrode layer, which was directly coated onto a glass substrate, as taught by Haas (Figure 7; column 7, lines 38-41; column 8, lines 51-53; column 9, lines 31-33; column 10, lines 45-50).

4. Claims 6-8 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Holman, Bryan, and the collective teachings of Bryan, Zuchowski and Haas as applied to claims 1 and 3 above, and further in view of Nakamura et al. (US 6346164, of record).

Regarding claims 6-7, it would have been obvious to one of ordinary skill to have the pellicle film progressively engage the adhesive layer during the vacuum laminating step such that the pellicle and adhesive are disposed at an angle relative to each other because it is known to dispose two layers at an angle relative to each other when vacuum laminating the same, as taught by Nakamura (Figure 2; column 2, lines 30-45), wherein such disposition aids in the removal of air from between the layers.

Regarding claim 8, selection of a particular vacuum magnitude would have been within purview of the skilled artisan.

Response to Arguments

5. Applicant's arguments filed 8/2/06 have been fully considered but they are not persuasive.

6. On p. 4 of the remarks, Applicant argues that Holman is directed to an electro-optic display and not a electro-optical sensor, as recited in claim 1, and therefore the light-transmissive substrate 110 of Holman must be thin to enable light to pass through it to enable viewing. In contrast, the glass substrate in an electro-optical sensor must be sufficiently thick to maintain a fixed distance between the electro-optical sensor (modulator) and a plate positioned below the glass substrate in order to enable capacitive measurement of voltage variations over a relatively large area. In other words, the light-transmissive substrate of Holman is too thin and flexible to provide a uniform thickness to serve as an area capacitive sensor.

Applicant's arguments are merely based on the fact that Holman uses different terminology than the present invention – Holman never expressly refers to his display as a modulator while the present invention never expressly refers to its modulator as a display;

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however, the secondary reference to Bryan use the terms modulator and display interchangeably when referring to his electro-optical sensor (column 1, lines 11-20; column 3, lines 40-47).

Therefore, Bryan is evidence that an electro-optical sensor (modulator) is an electro-optic display.

Regardless, it is the presence of an electro-optic sensor material, such as PDLC, that qualifies a display device as an electro-optical sensor; therefore, since the display device of Holman has an electro-optic sensor material, such as PDLC (column 3, lines 34-36), which is also the electro-optic sensor material used in both Bryan (column 7, lines 26-29) AND the present invention (p. 3, line 26), one would readily appreciate that the display device of Holman is in fact an electro-optical sensor. Therefore, Applicants additional argument on p. 4 -- *that because Holman is not directed at and is silent as to an electro-optic sensor material, it teaches away from using a thick glass substrate that is required for the electro-optical sensor of claim 1* - is completely unfounded and one having ordinary skill in the art clearly would have been motivated to use a glass substrate for the light-transmissive substrate in the electro-optical sensor of Holman, for the reasons set forth in the previous and present office actions.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jessica L. Rossi** whose telephone number is **571-272-1223**. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard D. Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JESSICA ROSSI
PRIMARY EXAMINER
